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EXAMINER	
ROJAS, BERNARD	
ART UNIT	**PAPER NUMBER**
2832	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,340	GODIN, MIKHAIL	
	Examiner	Art Unit	
	Bernard Rojas	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06292004, 10212003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what claim limitation "the load characteristics correspond to a spring having a spring constant K" means since every load can be represented as a spring having a spring constant K.

Claims 9, 11, 12, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the function of friction characteristics represents "wherein the first plurality of magnets is further configured to provide a flux density distribution in the air gap as a function of friction characteristics".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12, 14-17, 24 and 26-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoyama et al. [US 5,808,381].

Claim 1, Aoyama et al. discloses an actuator [figures 1 and 3] for operating upon a load having load characteristics, including a field assembly [1, 3] comprising a first plurality of magnets [1] configured to provide flux density distributions in an air gap [7] selected as a function of the load characteristics; and a coil assembly [2, 4].

Claim 2, Aoyama et al. discloses the actuator of claim 1, wherein dimensions of the first plurality of magnets are selected to provide a flux density in the air gap [col. 1 lines 5-15].

Claim 3, Aoyama et al. discloses the actuator of claim 2, wherein the first plurality of magnets are aligned in alternating groups, so that magnets in one of the alternating groups have a first polarity, and magnets in an adjacent alternating group have a second polarity opposite to the first polarity [figures 1 and 3].

Claim 4, Aoyama et al. discloses the actuator of claim 2, wherein the first plurality of magnets are positioned in a first set of aligned groups on a field blank, and at least one of the aligned groups of the first set of aligned groups includes a pair of magnets having the same polarity [figures 1 and 3].

Claim 5, as best understood, Aoyama et al. discloses the actuator of claim 2, wherein the load characteristics correspond to a spring having a spring constant K [since every load has a load characteristic that corresponds to a spring having a spring constant K].

Claim 6, Aoyama et al. discloses the actuator of claim 1, wherein the field assembly includes a first field blank [3] positioned to face a second field blank, the first and second field blanks each comprising a planar portion and additional sections which provide flux paths perpendicular to a direction of motion of the coil assembly, and further wherein the first plurality of magnets are positioned along the direction of motion on the planar portion of the first field blank [figures 1 and 3].

Claim 7, Aoyama et al. discloses the actuator of claim 6, wherein the first plurality of magnets are arranged in a first pattern of polarities, and further including a second plurality of magnets positioned on the planar portion of the second field blank to oppose the first plurality of magnets, and further wherein the second plurality of magnets are arranged in a second pattern of polarities which is a complement of the first pattern of polarities [figures 1 and 3].

Claim 8, Aoyama et al. discloses the actuator of claim 4, further including a second set of aligned groups of magnets positioned on an opposing field blank, wherein the first set of aligned groups are arranged in a first pattern of polarities, and further wherein the second set of aligned groups of magnets are arranged in a second pattern of polarities which is a complement of the first pattern of polarities [figures 1 and 3].

Claim 9, as best understood, Aoyama et al. discloses the actuator of claim 1, wherein the first plurality of magnets is further configured to provide a flux density distribution in the air gap [col. 1 lines 5-15].

Claim 10, Aoyama et al. discloses a linear actuator [figure 3] for operating upon a load having load characteristics, including a field assembly [1, 3] comprising distributed magnet field sources [1] which provide a flux density distribution in an air gap [7] corresponding to the load characteristics; and a coil assembly [2, 4].

Claim 11, as best understood, Aoyama et al. discloses the actuator of claim 10, wherein the distributed magnet field sources are further configured to provide a flux density distribution in the air gap [col. 1 lines 5-15].

Claim 12, as best understood, Aoyama et al. discloses a linear actuator [figure 3].

Claim 14, Aoyama et al. discloses a linear actuator for operating upon a load having load characteristics, including a field assembly [1, 3] comprising a magnet structure which includes a plurality of magnets [1] arranged in a sequence so that at least two adjacent ones of the plurality of magnets having a first polarity are followed by at least another of the plurality of magnets having a polarity different from the first polarity [figure 3], and flux distributions in an air gap [7] provided by the sequence correspond to the load characteristics; and a coil assembly [2, 4].

Claim 15, as best understood, Aoyama et al. discloses the actuator of claim 14, wherein the sequence of magnets is further configured to provide a flux density distribution in the air gap [col. 1 lines 5-15].

Claim 16, as best understood, Aoyama et al. discloses a linear actuator [figure 3].

Claim 17, as best understood, Aoyama et al. discloses the actuator of claim 14, wherein the load characteristics correspond to a spring having a spring constant K [since every load has a load characteristic that corresponds to a spring having a spring constant K].

Claim 24, Aoyama et al. discloses a linear actuator operational in a direction of motion [figure 3] including a plurality of field sub-assemblies each comprising a field blank [3], and wherein at least one of the plurality of field sub-assemblies includes a first sequence of magnets [1] of one polarity followed in the direction of motion by a second sequence of magnets of a different polarity, wherein the plurality of field sub-assemblies are positioned with respect to one another to form a gap [7] between the at least one of the plurality of field assemblies which includes the sequences of magnets, and another of the plurality of field assemblies [figure 3]; and a coil assembly including coils [2] positioned within the gap in a plane substantially parallel to the direction of motion.

Claim 26, Aoyama et al. discloses the linear actuator of claim 24, wherein the magnets in the first sequence of magnets have substantially the same widths as corresponding magnets in the second sequence of magnets [figure 3].

Claim 27, Aoyama et al. discloses the linear actuator of claim 24, wherein at least one magnet in the first sequence of magnets has substantially the same width as at least one magnet in the second sequence of magnets [figure 3].

Claim 28, Aoyama et al. discloses a linear actuator operational in a direction of motion including a plurality of field sub-assemblies each comprising a field blank [3], wherein a first one of the plurality of field sub-assemblies includes consecutive groups of magnets [1], each one of the consecutive groups of magnets including a plurality of magnets arranged to have a selected magnetic polarity and to produce a selected magnetic flux density distribution in an air gap, and further wherein the first one of the plurality of field sub-assemblies is positioned with respect to a second one of the plurality of field sub-assemblies to form the air gap [7] between them; and a coil assembly including at least one coil [2] positioned in a plane within the air gap, wherein the plane is substantially parallel to the direction of motion of the linear coil actuator [figure 3].

Claim 29, Aoyama et al. discloses the linear actuator of claim 28, wherein the field blanks of each of the plurality of field sub-assemblies comprise a generally planar portion, and additional sections extending along edges of the planar portion in the direction of motion, so that when first and second ones of the plurality of field sub-assemblies are positioned to form the gap, corresponding additional sections [8] of the field blanks in the first and second field sub-assemblies are adjacent one another to form a flux path perpendicular to the direction of motion for a magnet of the first field sub-assembly [figure 3].

Claim 30, Aoyama et al. discloses the linear actuator of claim 29, wherein the perpendicular flux path forms a portion of an actuator flux path which extends from the magnet of the first field assembly, across the air gap to a planar portion of the second

field sub-assembly, through a corresponding additional section of the field blank of the second field sub-assembly, through an adjacent corresponding additional section and then a planar portion of the first field sub-assembly, and back to the magnet of the first field subassembly [figure 3].

Claim 31, Aoyama et al. discloses the linear actuator of claim 29, further including a sequence of magnets positioned on the second one of the plurality of field sub-assemblies, wherein the consecutive groups of magnets are arranged in a first pattern of polarities, and further wherein the sequence of magnets are arranged in a second pattern of polarities which is a complement of the first pattern of polarities, and so that the actuator flux path also includes a magnet of the sequence of magnets having a polarity opposite the polarity of the magnet of the first field subassembly [figure 3]

Claims 19-23 rejected under 35 U.S.C. 102(e) as being anticipated by Floresta et al. [US 6,239,516].

Claim 19, Floresta et al. discloses a linear actuator [figures 1-2] including a field assembly comprising a first field blank [20], a first plurality of magnets [12, S] of one polarity followed by a second plurality of magnets [12, N] of a different polarity positioned on the first field blank in a direction of motion of the linear actuator, and a coil assembly [10] including a generally planar coil comprising a first force generating portion spaced apart from a second force generating portion so that the first force generating portion is positioned over ones of the first plurality of magnets whenever the second force generating portion is positioned over ones of the second plurality of magnets [figure 2B].

Claim 20, Floresta et al. discloses the linear actuator of claim 19, wherein the first and second pluralities of magnets are arranged in a first pattern of polarities [N S N S N S etc., figure 2B], and further including a third and fourth pluralities of magnets positioned on a planar portion of a second field blank to oppose the first plurality of magnets [figure 2A] and to form a gap [17], and further wherein the third and fourth plurality of magnets are arranged in a second pattern of polarities which is a complement of the first pattern of polarities, and the generally planar coil is moveable along the gap [col. 2 lines 47-56].

Claim 21, Floresta et al. discloses the linear actuator of claim 20, including additional sections extending along the planar portion of the first and second field blanks in the direction of motion, so that when first and second ones of the field blanks are positioned to form the gap, the additional sections form a flux path perpendicular to the direction of motion [figures 2C and 2D].

Claim 22, Floresta et al. discloses the linear actuator of claim 21, wherein the perpendicular flux path is a portion of an actuator flux path which extends through a magnet of the first plurality of magnets, across the gap to a magnet of the third plurality of magnets and the planar portion of the second field blank, through at least one of the additional sections and to the planar portion of the first field blank, and back to the magnet of the first plurality of magnets [figures 2C and 2D].

Claim 23, Floresta et al. discloses the linear actuator of claim 21, wherein the perpendicular flux path is a portion of an actuator flux path which lies generally in a plane perpendicular to the direction of motion [figures 2C and 2D].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13, 18, 25 and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. [US 5,808,381].

Claims 13, 18 and 25, Aoyama et al. discloses the claimed invention except for altering the dimensions of the magnet field sources. It would have been obvious to one of ordinary skill in the art at the time the invention was made to alter the magnetic field strength, since applicant has not disclosed that altering the magnetic field solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a uniform magnetic field.

Claims 32-40, the method steps of configuring a linear actuator would have been necessitated by the product structure as described for claims 1-17 and 24-31 previously.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,787,943. Although the conflicting claims are not identical, they are not patentably distinct from each other because they disclose the same linear motor structure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M-F 8-4:00), every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bernard Rojas
Br

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